

NOTES ON THE FAMILY AMPULLARIIDÆ, WITH LIST OF SPECIES,
VARIETIES, AND SYNONYMS, ALSO DESCRIPTIONS OF FOUR
NEW SPECIES.

By G. B. SOWERBY, F.L.S.

Read 16th April, 1909.

A CAREFUL study and comparison of the very numerous shells of this family to which I have had access has resulted in the amalgamation of a large number of supposed species. Many of the forms to which specific names have been given merge into others by almost imperceptible gradations, so that it is scarcely possible to define their limits. Some of the characters which have been regarded as forming important distinctions are found to be quite unreliable, such, for instance, as the malleation of the surface. In several cases that have come under my notice in specimens unquestionably belonging to the same species, some are strongly malleated, others only slightly so, and others are perfectly smooth. The umbilicus is also an unreliable character; *Ampullaria impervia* (Philippi), for instance, is more often umbilicated than not. In the following list I have placed provisionally as separate species some forms which would very likely unite with others, were a sufficient series under view to show the connexion, and in some cases the actual shells are unknown to me, so it is best to assume that a species is good until it can be proved bad. This work is therefore of necessity incomplete.

The present paper treats only of the species of the Western Hemisphere—*Ampullaria* (sensu stricto), *Ceratodes*, and *Pomella*. In a subsequent contribution I hope to treat of the Eastern forms—*Pila*, *Lanistes*, etc., and to take the opportunity of making any needful additions to or alterations in my present list.

Genus AMPULLARIA, Lamarek.

Ampullaria, Lam., 1799, Prodrôme, p. 76 (*ex parte*).

Ampullaria, Lam., Système, Animaux sans Vertèbres.

Ampullarius, Montfort, Conch. Syst., 1810, vol. ii, p. 242.

Pomacea, Perry, Conch. Expl., 1811, pl. xxviii.

Marisa, Gray, Phil. Mag., 1824, vol. lxiii, p. 276.

Pomus, H. & A. Adams, Genera Rec. Moll., 1854, vol. i, p. 346.

Type.—*Ampullaria urceus*, Müller.

Note.—Lamarck's diagnosis of the genus describes the operculum as 'corné' (horny). This does not apply to the species usually regarded as the type, viz. *A. ampullacea* (*Helix ampullacea*, Linn.), but only to the species of the Western Hemisphere, all of which have horny opercula, while those of all the Eastern forms are more or less testaceous, with the exception of the sinistral African species distinguished under the generic names of *Lanistes* and *Meladomus*.

Species of AMPULLARIA (*sensu stricto*).

1. AMPULLARIA AMAZONICA, Reeve.

Conch. Icon., sp. 55.

Hab.—River Amazon.

This is allied to *haustrum* and *gigas*, but its suture, though depressed, is not deeply channelled, as in those species.

2. AMPULLARIA AULANIERI, Hupé.

Voy. de Castelnau, 1847.

Hab.—Peru.

3. AMPULLARIA AURIFORMIS, Reeve.

Conch. Icon., sp. 133.

Hab.—Honduras (Reeve).

This may possibly be a variety of *A. Hopetonensis*, but the effusion of the base of the aperture is remarkable.

4. AMPULLARIA AVELLANA, n.sp., p. 360.

5. AMPULLARIA BAERI, Dautzenberg.

Journ. de Conch., 1901, vol. xlix, p. 312, pl. ix, figs. 12, 13.

Hab.—Rio Mixiollo, Prov. Huallaga, Peru.

6. AMPULLARIA BRIDGESI, Reeve.

Conch. Icon., sp. 50.

Hab.—Rio Grande, Bolivia.

7. AMPULLARIA BULLA, Reeve.

Conch. Icon., sp. 104.

Hab.—Mexico.

8. AMPULLARIA BUXEA, Reeve.

Conch. Icon., sp. 112.

Hab.—Jamaica.

9. AMPULLARIA CANALICULATA, Lamarek.

Anim. sans Vert., 1819, 1st ed., vol. vi, p. 178.

Hab.—Rivers of Guadeloupe (Lamarek).

I have not been able to identify this shell. The figure in Delessert's "Receuil," pl. xxxi, fig. 3, is *A. gigas*, Spix, and cannot be Lamarek's type of *canaliculata*, which is described as only 25 × 22 lines. The shell figured in Reeve's "Conchologia Iconica" for the species is an Eastern form, *A. speciosa*, Phil., while specimens of *A. haustum* and *immersa*, Reeve, and *insularum*, D'Orbigny, have done duty for it in various collections.¹

10. AMPULLARIA CASTELLOI, Sowerby.

Proc. Malac. Soc., 1894, vol. i, p. 48, pl. iv, fig. 22.

Hab.—River Meta, S.E. Bogota.

This species presents considerable variation. The columella of the type is bright red, but in other specimens it is nearly white.

¹ Since reading this paper I have identified this species. See note, p. 363.

The umbilicus of some specimens is completely closed, in others partly open. In view of the inconstancy of this latter character it is hardly practicable to maintain Dall's section *Limnopomus*, to which this species seems to belong.

11. AMPULLARIA CATAMARCENSIS, Sowerby.

Proc. Zool. Soc., 1874, p. 600, pl. lxxii, fig. 4.

Hab.—Catamarca, Andes of Peru.

12. AMPULLARIA CERASUM, Hanley.

Conch. Miscellany; Reeve, Conch. Icon., fig. 99.

A. aurostoma, Reeve (Lea MSS.), Conch. Icon., fig. 131.

Hab.—Mexico.

13. AMPULLARIA CINGULATA, Philippi.

Conch. Cab. Amp., p. 19, pl. v, fig. 3.

Hab.—? (Berlin Museum).

A doubtful species which may possibly be young of *A. gigas*.

14. AMPULLARIA CITREUM, Reeve.

Conch. Icon., sp. 117.

Hab.—?

15. AMPULLARIA COLUMELLARIS, Gould.

Gould, "Otia," p. 51.

A. Sprucei, Reeve, Conch. Icon. Amp., fig. 134.

Hab.—Tarapoto, east side of the Andes (Spruce); Rio Chunchurras, Peru (Da Costa); Amazon River.

This is the type of Dall's section *Limnopomus*, Journ. Conch., vol. xi, pp. 53, 54. See above note on *A. Castelloi*.

16. AMPULLARIA CONOIDEA, Martens.

Biologia Central. Amer., 1899, p. 423, pl. xxiv, figs. 10, 11.

Hab.—Costa Rica.

17. AMPULLARIA CORNUCOPIA, Reeve.

Conch. Icon. Amp., fig. 4.

Hab.—Columbia (Reeve).

18. AMPULLARIA COSTARICANA, Martens.

Biologia Central. Amer., 1899, pp. 418, 644, pl. xxiv, figs. 14–17.

Hab.—Costa Rica.

19. AMPULLARIA COUSINI, Jousseauime.

Bull. Soc. Zool. Fr., 1877, vol. xii, p. 185, pl. iii, fig. 3.

Hab.—Ecuador.

20. AMPULLARIA CRASSA, Swainson.

Zool. Illust., ser. 1, vol. iii, p. 101; Reeve, Conch. Icon. Amp., fig. 5.

A. Browni, Jay: Ann. Lyc. Nat. Hist. New York, 1846, vol. iv.

A. Olivieri, Deshayes.

Helicina exumbilicata, Spix.

Hab.—Brazil, Guyana, etc.

This is smaller and comparatively broader than *A. columellaris*, to which it is allied.

21. AMPULLARIA CROSSEANA, Hidalgo.

Journ. de Conch., 1871, vol. xix, p. 206; vol. xx, p. 242, pl. vii, fig. 1.

Hab.—River Amazon.

This is allied to *A. gigas*, Spix, of which it may prove to be a variety without colour-bands.

22. AMPULLARIA CUMINGI, King.

Zool. Journ., vol. v, p. 344; Reeve, Conch. Icon. Amp., sp. 81.

A. peristomata, D'Orbigny: Mag. Zool., 1835, p. 33.

A. miltocheilus, Reeve: Conch. Icon. Amp., sp. 120.

A. Quitensis, V. d. Busch: Proc. Zool. Soc., 1859, p. 168.

Hab.—Prov. of Chiapas, Mexico (Ghiesbreght); Panama; Quito.

23. AMPULLARIA CYCLOSTOMA, Spix.

Test. Fluv. Brasil., 1827, p. 4, pl. iv, fig. 5.

A. Spixii, D'Orb.: Moll. Voy. Amér. Mérid., 1839, p. 376, pl. lii, figs. 7, 8.

A. elegans, D'Orb.: Mag. de Zool., 1835.

A. pulchella, Anton: Verz. Conch., 1839, p. 50.

Hab.—Rio Parana, La Plata, Bolivia, etc.

Var. ELEGANS, D'Orbigny.

A. elegans, D'Orb.: Mag. de Zool., 1835.

Hab.—La Plata.

Var. ROISSYI, D'Orbigny.

A. Roissyi, D'Orb.: Moll. Voy. Amér. Mérid., p. 377, pl. lii, figs. 1–3.

Reeve places *A. cyclostoma*, Spix, with *A. Platae*, Maton, which is quite different.

24. AMPULLARIA DA COSTÆ, n.sp., p. 359.

25. AMPULLARIA DECUSSATA, Moricand.

Mém. Soc. Phys. Genève, vol. viii, p. 445, pl. ii, figs. 26, 27; Reeve, Conch. Icon., sp. 127.

A. intropicta, Reeve: Conch. Icon., sp. 89.

Hab.—Brazil.

26. AMPULLARIA DOLIOIDES, Reeve.

Conch. Icon., sp. 75.

Hab.—La Plata, etc.

27. ¹ AMPULLARIA D'ORBIGNYANA, Philippi.

Conch. Cab., p. 65, pl. xxi, fig. 4.

A. canaliculata, var., D'Orb.: Voy. Amér. Mérid., pl. iv, fig. 4.

Hab.—La Plata.

¹ This is *A. canaliculata*, Lamk.; see note, p. 363.

28. AMPULLARIA ELECTRINA, Reeve.

Conch. Icon., sp. 95.

Hab.—?

29. AMPULLARIA EROGATA, Crosse & Fischer.

Journ. de Conch., 1890, vol. xxxviii, p. 113.

Hab.—Guatemala.

30. AMPULLARIA ERRONEA, Nevill.

Cat. Moll., 1877, fasc. E; Hand-list of Moll. Ind. Mus. Calcutta, 1884, pt. ii, p. 12.

A. aperta, Reeve: Conch. Icon., figs. 90, 91 (*non* Philippi).

Hab.—South America (Nevill).

Philippi's *A. aperta* is an Indian species.

31. ¹ AMPULLARIA ERYTHROSTOMA, Reeve.

Conch. Icon., sp. 59.

A. hamastoma, Reeve: Conch. Icon., sp. 34.

Hab.—Peru.

The habitat given by Reeve, "Zanzibar," is certainly erroneous.

32. AMPULLARIA EUMICRA, Crosse & Fischer.

Journ. de Conch., 1890, vol. xxxviii, p. 113.

Hab.—Mexico.

33. AMPULLARIA EXIGUA, Philippi.

Conch. Cab., p. 46, pl. xiii, fig. 4.

Hab.—?

This may be a variety of *A. crassa*, Swainson.

34. AMPULLARIA EXIMIA, Dunker.

Zeitsch. f. Malak., 1853, vol. x, p. 93.

A. cassidiformis, Reeve: Conch. Icon., sp. 56.

Hab.—Mazatlan, Lake Maricaibo, Venezuela.

35. AMPULLARIA EXPANSA, Miller.

Mal. Blätt. (2), 1879, p. 150, pl. xv, figs. 5, 6.

Hab.—Ecuador.

36. AMPULLARIA FIGULINA, Spix.

Helix figulina, Spix: Test. Fluv. Brasil., pl. iv, fig. 4.

Hab.—?

This may possibly be an extreme form of *A. Hopetonensis*.

37. AMPULLARIA GHIESBREGHTI, Reeve.

Conch. Icon., sp. 123.

Hab.—Prov. of Chiapas, Mexico.

¹ Upon comparing this with Lanarek's type of *A. Guyanensis* at Geneva I find it identical; see note, p. 363.

38. AMPULLARIA GIGAS, Spix.

Test. Fluv. Brasil., 1827, p. 1, pl. i, fig. 1; Reeve, Conch. Icon., sp. 3.

A. gigantea, Tristram: Proc. Zool. Soc., 1863, p. 414.

A. canaliculata, Delessert (*non* Lamarck), Recueil Coq., pl. xxxi, figs. 31a-b.

Hab.—Brazil.

39. AMPULLARIA GLAUCA, Linn.

Helix glauca, Linn.: Mus. Ulric., 1764, p. 667.

A. glauca, Linn.: Philippi, Conch. Cab., pl. xii, fig. 4: Reeve, Conch. Icon., sp. 85.

Helix oculus-communis, Gmelin.

Hab.—Demerara, Trinidad, etc.

This is an extremely variable species, to many forms of which specific names have been attached. The following I regard as varieties.

Var. EFFUSA, Müller.

Nerita effusa, Müller.

Bulimus effusus, Bruguière.

A. effusa, Swainson.

A. crocostoma, Phil.: Conch. Cab., pl. xii, fig. 3.

Var. GEVEANENSIS, Deshayes.

A. Geveanensis, Desh.: Lamarck's Hist. Nat. Anim. sans Vert., 1838, vol. viii, p. 541.

A. Geveana, Phil.: Conch. Cab., pl. vii, fig. 7.

A. villata, Martens.

Hab.—Cayenne.

Var. PRUNULUM, Reeve.

A. prunulum, Reeve: Conch. Icon., sp. 82.

Hab.—New Granada (Reeve).

Var. LUTEOSTOMA, Swainson.

A. luteostoma, Swainson: Zool. Illust., vol. iii, pl. clvii.; Reeve, Conch. Icon., sp. 84.

A. dubia, Guilding: Zool. Journ., vol. iii, p. 359.

Hab.—Venezuela.

Var. PACHYSTOMA, Philippi.

A. pachystoma, Phil.: Conch. Cab., p. 44, pl. xii, fig. 5.

Var. BALTEATA, Philippi.

A. balteata, Phil.: Conch. Cab., p. 21, pl. v, fig. 7.

A. Guadeloupensis, Martens: Mal. Blätt., 1857, vol. iv, p. 199.

Var. CUBENSIS, Reeve.

A. Cubensis, Reeve: Conch. Icon., sp. 83.

Hab.—Cuba.

Var. *ORONOCENSIS*, Reeve.*A. Oronocensis*, Reeve: Conch. Icon., sp. 45.*Hab.*—River Oronoco.Var. *CUPRINA*, Reeve.*A. cuprina*, Reeve: Conch. Icon., sp. 1.*Hab.*—? (Reeve).40. *AMPULLARIA GOSSEI*, Reeve.

Conch. Icon., sp. 93.

Hab.—Jamaica.41. *AMPULLARIA GRANULOSA*, Sowerby.

Proc. Malac. Soc., 1894, vol. i, p. 48, pl. iv, fig. 22.

Hab.—Cayenne (Eudel).42. ¹*AMPULLARIA GUYANENSIS*, Lamarek.

Anim. s. Vert., 1819, vol. vi, p. 176.

Hab.—Guyana.

This name has erroneously been placed in the synonymy of *A. glauca*, with which it has no affinity. It is more nearly related to *A. urceus*.

43. *AMPULLARIA HAUSTRUM*, Reeve.

Conch. Icon., sp. 23.

Hab.—River Maranon, Brazil (Reeve).Var. *IMMERSA*, Reeve.*A. immersa*, Reeve: Conch. Icon., sp. 52.*Hab.*—Rio Grande, Bolivia.44. *AMPULLARIA HEPATARIA*, Reeve.

Conch. Icon., sp. 77.

Hab.—?

Nevill unites this with *A. globosa*, Swainson, but it surely belongs to the Western Hemisphere, and may possibly prove to be one of the numerous forms of *A. Hopetonensis*.

45. *AMPULLARIA HOPETONENSIS*, Lea.

Trans. Phil. Soc., 1839, vol. v, pl. xix, fig. 84.

A. depressa, Say: Exped. St. Peter's River, 1824, vol. ii, p. 264 (*non* Lamarek, 1822).*Hab.*—Georgia, Florida, Hopetown, etc.

The name is rather unfortunate for this very variable and widely distributed species, but the law of priority compels its adoption.

The following I regard as synonyms and varieties, though others may still continue to regard some of them as distinct species. In

¹ *A. erythrostoma* and *hamastoma* of Reeve are synonyms; see note, p. 363.

comparing a large series of these shells, it is to be observed that the great differences in form and aspect produced by the elation or depression of the spire, the expansion of the outer lip, as well as the smoothness or malleation of the surface, etc., are characters subject to such variation in degree that I find it impossible to define the limits of each form.

Var. AUSTRALIS, D'Orbigny.

A. australis, D'Orb.: Voy. Amér. Mérid., p. 375, pl. li, figs. 3, 4.

Hab.—Buenos Ayres.

Var. BELIZENSIS, Crosse & Fischer.

A. Belizensis, C. & F.: Journ. de Conch., 1890, p. 110.

Hab.—Belize, Mexico.

Var. DYSONI, Hanley.

A. Dysoni, Hanley: Conch. Misc., No. i, pl. ii, fig. 1.

A. paludosa, Say: N. H. Diss., 1840, p. 260.

A. venetus, Reeve: Conch. Icon., sp. 17.

A. Hondurasensis, Reeve: Conch. Icon., sp. 15.

Hab.—Honduras.

Var. FLAGELLATA, Say.

A. flagellata, Say: Conch. U.S., 1856, p. 147.

A. Lamarcki, Phil.: Conch. Cab., p. 67, pl. xxi, fig. 5.

A. flatilis, Reeve: Conch. Icon., sp. 31.

A. Guatemalensis, Morelet?

Hab.—Mexico, etc.

Var. FUMATA, Reeve.

A. fumata, Reeve: Conch. Icon., sp. 124.

Hab.—Prov. of Chiapas, Mexico.

Var. LEMNISCATA, Crosse & Fischer.

A. lemniscata, C. & F.: Journ. de Conch., 1890, p. 112.

Hab.—Belize, Mexico.

Var. LIVESCENS, Reeve.

A. livescens, Reeve: Conch. Icon., sp. 21.

Hab.—?

Var. MALLEATA, Jonas.

A. malleata, Jonas: Beitr., p. 22, pl. x, fig. 11.

Hab.—Mexico.

Var. MARTENSIANA, Nevill.

A. Martensiana, Nevill: Hand-list Moll. Ind. Mus. Calcutta, 1884, p. 10.

Hab.—South America (Nevill).

Var. OCCLUSA, Crosse & Fischer.

A. occlusa, C. & F.: Journ. de Conch., 1890, p. 111.

Hab.—TanESCO, Guatemala.

Var. PHÆOSTOMA, Philippi.

A. phæostoma, Phil. : Conch. Cab., p. 45, pl. xiii, fig. 2.

Var. PORPHYROSTOMA, Reeve.

A. porphyrostoma, Reeve : Conch. Icon., sp. 30.

Hab.—New Granada.

Var. PYRUM, Philippi.

A. pyrum, Phil. : Conch. Cab., p. 18, pl. v, fig. 2.

Var. REFLEXA, Swainson.

A. reflexa, Swainson : Zool. Illust., vol. iii, p. 173.

Hab.—Cuba.

Var. RETUSA, V. Olfers.

A. retusa (V. Olfers), Phil. : Conch. Cab., p. 18, pl. v, fig. 1.

Var. YUCATANENSIS, Crosse & Fischer.

A. Yucatanensis, C. & F. : Journ. de Conch., 1890, p. 110.

Hab.—Yucatan.

46. AMPULLARIA IMPERVIA, Philippi.

Zeitsch. f. Malak., 1852, vol. ix, p. 21.

Hab.—Bolivia, etc.

Var. NUBILA, Reeve.

A. nubila, Reeve : Conch. Icon., 1856, sp. 65.

Hab.—River Salamonis, Amazons.

This species is generally known as *A. nubila*, which, although it is generally less elately conical, cannot be separated from Philippi's species. Philippi's type is imperforate, but most of the specimens are more or less umbilicated.

47. AMPULLARIA INNEXA, Crosse & Fischer.

Journ. de Conch., 1890, vol. xxxviii, p. 111.

Hab.—Monte de Mistan, Mexico.

48. AMPULLARIA INSULARUM, D'Orbigny.

Voy. Amér. Mérid., Moll., 1839, p. 374, pl. li, figs. 1, 2 ; Reeve, Conch. Icon., figs. 42, 43.

A. vermiformis, Reeve : Conch. Icon., sp. 54.

A. fasciata, Reeve ; Conch. Icon., sp. 41.

A. australis, D'Orb. : Voy. Amér. Mérid.

A. Georgi, J. W. Williams : Ann. Mag. Nat. Hist., 1889, vol. iv, p. 47.

Hab.—Parana, Rio Grande, Bolivia, Paraguay, etc.

I cannot agree with Nevill in uniting this with *A. gigas*. The shell is stouter in substance, more oblique in form, and has a roughly striated surface. Reeve's type of *A. vermiformis* is still more oblique, but it cannot be separated from *A. insularum*.

49. AMPULLARIA INTERRUPTA, n.sp., p. 361.

50. AMPULLARIA LABIOSA, Koch.

Conch. Cab., p. 58, pl. xviii, fig. 5.

This has been quoted as Indian, which seems to be a mistake. From Philippi's figure it appears to be allied to *A. Hopetonensis*; and there is a specimen, believed to be *A. labiosa*, in the British Museum which has a thin, horny operculum, proving it a Western form.

51. AMPULLARIA LATTREI, Reeve.

Conch. Icon., sp. 22.

Hab.—Coban, Guatemala.

52. AMPULLARIA LEVIOR, n.sp., p. 361.

53. AMPULLARIA LINEATA, Spix.

Helix lineata, Spix: Test. Fluv. Brasil., 1827, pl. v, fig. 2.

A. fasciata, Swainson: Zool. Illust., 1822, ser. I, vol. II, pl. ciii (not of Lamarek, 1819, nor Roissy, 1805).

A. fasciata, var., Swainson: Zool. Illust., ser. II, vol. II, pl. lxiv.

A. Swainsoni, Phil.: Conch. Cab., p. 53, pl. xvi, fig. 5.

A. Swainsoni, Reeve: Conch. Icon., sp. 128.

A. Linnæi, Phil.: Conch. Cab., 1852, p. 62, pl. xx, fig. 6.

A. Chemnitzii, Phil.: Conch. Cab., p. 39, pl. x, fig. 5.

Hab.—Brazil, British Guyana, etc.

It appears that the name *fasciata* cannot be retained in the genus, as it was used by Roissy and Lamarek for *Ampullaria ampullacea* (Linn.).

54. AMPULLARIA LYMNÆFORMIS, Reeve.

Conch. Icon., sp. 39.

Hab.—River Marañon (Reeve).

55. AMPULLARIA MARTINEZI, Hidalgo.

Journ. de Conch., 1866, vol. xiv, p. 345, pl. xiv, fig. 5.

Hab.—Ecuador.

I have some doubt as to whether this is distinct from *A. columellaris*; it has a much shorter spire and a more tapering form.

56. AMPULLARIA METCALFEI, Reeve.

Conch. Icon., sp. 119.

Hab.—?

57. AMPULLARIA MIAMENSIS, Pilsbry.

Proc. Acad. Nat. Sci. Philadelphia, 1899, p. 365.

Hab.—Florida.

58. AMPULLARIA MODESTA, V. d. Busch.

Proc. Zool. Soc., 1859, p. 168.

Hab.—Quito.

59. AMPULLARIA MONACHA, Crosse & Fischer.

Journ. de Conch., 1890, vol. xxxviii, p. 112.

Hab.—Santa Efigenia, Mexico.

60. AMPULLARIA NIGRILABRIS, Philippi.

Conch. Cab., p. 65, pl. xxi, fig. 2.

Hab.—Rio Janeiro.

This shell is rather like *A. sordida*, Swainson, from which it differs principally in being deussately striated.

61. AMPULLARIA NOBILIS, Reeve.

Conch. Icon., sp. 8.

Hab.—East Peru.

62. AMPULLARIA NOTABILIS, Reeve.

Conch. Icon., sp. 63.

Hab.—Peru.

63. AMPULLARIA NOVÆGRANADÆ, V. d. Busch.

Proc. Zool. Soc., 1859, p. 169.

Hab.—New Granada.

64. AMPULLARIA OBLONGA, Swainson.

Zool. Illust., vol. ii, p. 136; Reeve, Conch. Icon., sp. 70.

Hab.—Caripe, Venezuela.

65. AMPULLARIA OLIVACEA (Spix).

Test. Fluv. Brasil., 1827, pl. iii, fig. 1; Reeve, Conch. Icon., sp. 38.

Var. QUERCINA, Spix.

A. quercina, Spix: Test. Fluv. Brasil., pl. iii, fig. 2.

Hab.—Brazil.

66. AMPULLARIA OVIFORMIS, Deshayes.

Encyc. Méth. Vers., vol. ii, p. 34.

Hab.—Cayenne.

67. AMPULLARIA PAPYRACEA, Spix.

Test. Fluv. Brasil., p. 3, pl. iv, figs. 1, 2; Reeve, Conch. Icon., sp. 44.

Hab.—Meobamba (Reeve).

68. AMPULLARIA PEALEANA, Lea.

Trans. Amer. Phil. Soc., 1838, new ser., vol. vi; Philippi, Conch. Cab., p. 62, pl. xxvii, fig. 7.

Hab.—Turbaeo, Columbia.

69. AMPULLARIA PERNAMBUCENSIS, Reeve.

Conch. Icon., sp. 103.

Hab.—Pernambuco.

70. AMPULLARIA PERTUSA, Sowerby.

Proc. Malac. Soc., 1894, vol. i, p. 94, pl. iv, fig. 23.

Hab.—Merida, Venezuela.

71. AMPULLARIA PETITI, Crosse.

Journ. de Conch., 1890, vol. xxxix, p. 214, pl. iv, fig. 2.

Hab.—Amazon River.

This is perhaps a variety of *A. impervia*, Phil., than which the type is much larger, with a more conical spire. It is very much thickened towards the base.

72. AMPULLARIA PHYSIS, Hupé.

Hab.—Amazon River.

73. AMPULLARIA PHYSOIDES, Reeve.

Conch. Icon., sp. 107.

Hab.—Pernambuco.

74. AMPULLARIA PICTA, Reeve.

Conch. Icon., sp. 117.

Hab.—Mazatlan.

75. AMPULLARIA PINEI, Dall.

Nautilus, vol. xii, p. 75.

Hab.—Florida.

76. AMPULLARIA PLATÆ, Maton.

Trans. Linn. Soc., 1809, vol. x, pl. xxiv, figs. 16, 17.

Asolene Platæ, D'Orb.: Voy. Amér. Mérid., p. 364.

A. naticoides, D'Orb.

Hab.—La Plata.

77. AMPULLARIA PRODUCTA, Reeve.

Conch. Icon., sp. 68.

Hab.—Amazon River.

78. AMPULLARIA PULCHRA, Gray.

Griffith Ed. Cuvier, pl. i, fig. 6.

A. Hanleyi, Reeve: Conch. Icon., sp. 113.

Hab.—South America.

79. AMPULLARIA PUNCTICULATA, Swainson.

Zool. Illust., 1822, vol. iii, p. 143; Reeve, Conch. Icon., sp. 19.

A. vexillum, Reeve: Conch. Icon., sp. 20.

Hab.—Cayenne.

80. AMPULLARIA PUNTAPLAYA, Cousin.

Bull. Soc. Zool. France, 1887, vol. xii, p. 278.

Hab.—Ecuador.

81. AMPULLARIA PURPURASCENS, Guppy.

Ann. Mag. Nat. Hist., 1864, vol. xiv, p. 243.

Hab.—Trinidad.

82. AMPULLARIA QUINQUIDENSIS, Miller.

Mal. Blätt. (2), vol. i, p. 150, pl. viii, figs. 1, 2.

Hab.—Ecuador.

83. AMPULLARIA REYERI, Cousin.

Bull. Soc. Zool. France, 1887, vol. xii, p. 279, pl. iv, fig. 7.

Hab.—Ecuador.

84. AMPULLARIA ROBUSTA, Philippi.

Conch. Cab., p. 50, pl. xv, figs. 4, 5.

Hab.—?

This may be a variety of *A. columellaris*, but it is perforate and the aperture is rather more oblique.

85. AMPULLARIA ROTUNDATA, Say.

Descript., etc., New Harmony, p. 21.

Hab.—St. John's River, Florida.

Unfigured and unknown to me, and most likely a form of *Hopetonensis*.

86. AMPULLARIA RUFILINEATA, Reeve.

Conch. Icon., sp. 7.

Hab.—?

87. AMPULLARIA SCALARIS, D'Orbigny.

Voy. Amér. Mérid., Moll., p. 374, pl. l, figs. 1–3.

Hab.—Bolivia.

88. AMPULLARIA SCHRAMMI, Crosse.

Journ. de Conch., 1876, vol. xxiv, p. 102.

Hab.—Oyapock River, French Guyana.

89. AMPULLARIA SEMITECTA, Mousson.

Mal. Blätt., 1873, vol. xxi, p. 18; Pfeiffer, Novit. Conch., vol. iv, p. 137.

Hab.—Bogota.

90. AMPULLARIA SIMPLEX, Reeve.

Conch. Icon., sp. 98.

Hab.—?

91. AMPULLARIA SINAMARINA, Bruguière.

Deshayes in Lamk., Anim. s. Vert., 2nd ed., vol. viii, p. 548.

Hab.—Upper Corentyne River, British Guyana.

Shell resembling a *Paludomus*, closely transversely striated.

92. AMPULLARIA SORDIDA, Swainson.

Zool. Illust., 1822, vol. iii, pl. cxliii; Philippi, Conch. Cab., p. 38, pl. x, fig. 3; Reeve, Conch. Icon., sp. 72.

A. intermedia, Fér.: Voy. de l'Uranie, pl. lxviii, figs. 1, 2.

A. autumnalis, Reeve: Conch. Icon., sp. 16.

A. melanocheila, Reeve: Conch. Icon., sp. 24.

Hab.—Rio de la Plata, Bolivia, etc.

93. AMPULLARIA STORERIA, Jay.

Catal., 1839, pl. i, fig. 5.

Hab.—Amazons.

94. AMPULLARIA STREBELI, Martens.

Biol. Cent. Americana, p. 415, pl. xxii, fig. 2.

Hab.—East Mexico.

95. AMPULLARIA SWAINSONI, Philippi.

Conch. Cab., p. 53, pl. xvi, fig. 5.

A. fasciata, Swainson: Zool. Illust., 1822, ser. II, vol. II, pl. Ixiv
(not of Roissy, 1805, nor Lamarck, 1819).*Hab.*—La Plata.

96. AMPULLARIA TANSIANA, Philippi.

Zeitsch. f. Malak., 1852, vol. ix, p. 27; Conch. Cab., p. 51, pl. xvi,
figs. 1, 2.*Hab.*—Puerto Cabello.

97. AMPULLARIA TENUISSIMA, Jousseaume.

Le Naturaliste, 1894, p. 120.

Hab.—La Coca, Ecuador.

98. AMPULLARIA TESTUDINEA, Reeve.

Conch. Icon., sp. 114.

Hab.—Amazons.

99. AMPULLARIA TROCHULUS, Reeve.

Conch. Icon., sp. 66.

Hab.—?

100. AMPULLARIA URCEUS (Müller).

Nerita urceus, Müller: Hist. Ver., 1774, p. 174.*A. rugosa*, Lamarck.*Pomus urceus*, H. & A. Adams: Gen. Rec. Moll., vol. i, p. 346.*A. leucostoma*, Swainson.*A. dolium*, Phil.: Conch. Cab., p. 40, pl. xi, fig. 1.*A. urceus*, Reeve: Conch. Icon., sp. 18.*Hab.*—Trinidad, New Granada (Morelet), Mississippi (Dall).

101. AMPULLARIA VIOLACEA, Valenc.

Humboldt & Bonpl., Obs. Zool., 1833, vol. II, p. 259; Martens, Zool.
Blätt., vol. xii, p. 52.*Hab.*—Veracruz.

102. AMPULLARIA YATESI, Reeve.

Conch. Icon., sp. 28.

Hab.—River Maranon (Reeve).

103. AMPULLARIA ZONATA (Spix).

Test. Fluv. Brasil., p. 1, pl. i, figs. 1, 2; Philippi, Conch. Cab., p. 9, pl. ii, fig. 1; Reeve, Conch. Icon., figs. 53, 155.

Hab.—Columbia, Brazil, etc.

Var. ARCHIMEDIS, Spix.

A. Archimedis, Spix: Philippi, Conch. Cab., p. 9, pl. xx, fig. 1.

A. pyrum, Phil.: Conch. Cab., p. 18, pl. v, fig. 2.

Var. MARGINATRA, Jonas.

A. marginatra, Jonas: Zeitschr. f. Malak., 1845, p. 69; Philippi, Conch. Cab., p. 63.

Sub-genus CERATODES, Guilding.

Ceratodes, Guilding: Zool. Journ., 1828, vol. iii, p. 540.

Marisa, H. & A. Adams (*non* Gray).

104. AMPULLARIA CORNUARIETIS (Linn.).

Helix cornuarietis, Linn.: Syst. Nat., 1758, 10th ed.

Planorbis cornuarietis, Lamk.: Système, p. 93.

A. Knorri, Philippi: Conch. Cab., p. 37, pl. xviii, fig. 3.

A. rotula, Mousson.

A. Chiquitensis, D'Orb.: Voy. Amér. Mérid., p. 367, pl. xlvi, fig. 10.

Hab.—Parana, Trinidad, Venezuela, New Granada, etc.

105. AMPULLARIA PLANORBULA, Philippi.

Conch. Cab., p. 26, pl. vii, fig. 3.

Hab.—Para.

Sub-genus POMELLA, Gray.

Pomella, Gray: Proc. Zool. Soc., 1847, p. 148.

106. AMPULLARIA MEGASTOMA, Sowerby.

Tank. Cat. App., 1825, p. 10.

A. neritoides, D'Orb.: Voy. Amér. Mérid., p. 368, pl. xlix, figs. 1, 2.

Hab.—Uruguay.

This fine species stands quite alone, distinguished principally by the great size of its aperture.

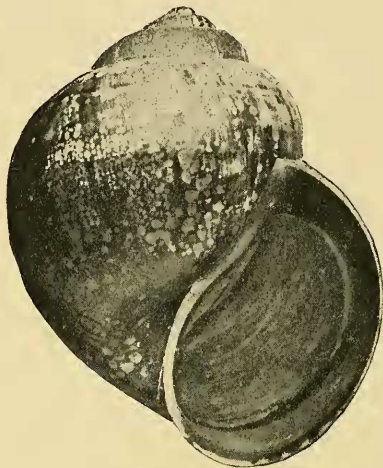
DESCRIPTION OF THE NEW SPECIES.¹

AMPULLARIA DA COSTÆ, n.sp.

Testa mediocriter umbilicata, ovato-turbinata, tenuis, nitens, fuscescens, fusco fasciata, postice purpureo tincta; spira convexa turbinata; anfractus 5, rotunde convexi, obscure suboblique plicato-striati, sutura angustissima sejuncti; anfractus ultimus $\frac{3}{4}$ longitudinis

¹ The types of these species are now in the British Museum.

testæ æquans, rotunde convexus, basim versus paulo attenuatus; apertura ovalis, intus fusco-purpurea; peristoma tenue. Long. 50, lat. 40; apertura, long. 32, lat. 19 mm.



Hab.—Costa Rica.

A shell of simple symmetrical form, its greatest width being about the middle, with the anterior and posterior ends nearly equal. The whorls are smoothly rounded, without sutural depression, but separated by an exceedingly narrow suture. The prevailing colour is brown, but tinged here and there with purple, particularly about the spire. The interior of the aperture is deep brownish purple.

The type-specimen came from the collection of the late S. I. Da Costa.

AMPULLARIA AVELLANA, n.sp.

Testa ovalis, mediocriter umbilicata, tenuiuscula, longitudinaliter striato-plicata, fusco-olivacea, lineis fuscis plus minusve obscuris



fasciata; spira breviter gradata; anfractus 4, penultimus rotundatus; ultimus $\frac{2}{3}$ longitudinis testæ æquans, ovatus, convexiusculus, ad

suturam depressus; apertura ovalis; peristoma tenue. Long. 25, lat. 20; apertura, long. 18, lat. 11 mm.

Hab.—Lagunella, Venezuela.

A small oval shell, with a moderate, rather narrow umbilicus, depressed, but not channelled at the suture, the top of the body-whorl forming an obtuse rounded angle. The sides are rather less roundly convex than most of the species of this group. The surface is rather irregularly striated, of an olive-tinted brown colour, with numerous rather faint transverse brown lines, which become more distinct towards the aperture.

AMPULLARIA INTERRUPTA, n.sp.

Testa imperforata, solidula, ovata, viridis, varicibus planulatis, vix elatis, luteo strigatis, fusco maculatis ornata, longitudinaliter irregulariter plicata, subtilissime corrugatim striata; spira conica, elatiuscula; anfractus 6, convexi, sutura angusta sejuncti; ultimus $\frac{3}{4}$ longitudinis testæ æquans, supra rotundatus, infra levissime attenuatus; apertura ovata, antice latiuscula, postice angustior, fauce fusca; labrum intus cæruleo fasciatum, ad marginem fusco tessellatum; columella crassa, alba, leviter sinistrorsum effusa. Operculum corneum, nigro-fuscum. Long. 28, lat. 22; apertura, long. 18, lat. 12 mm.



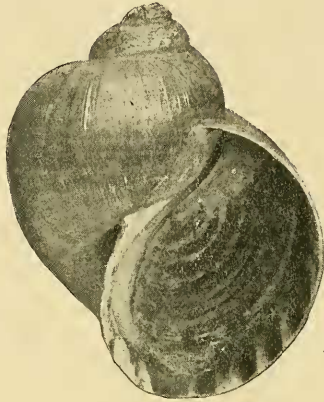
Hab.—Laguna Urao, Venezuela (Da Costa).

This small species is allied to *A. columellaris*, D'Orb., and *Castelloi*, Sow., belonging to Dall's section *Limnopomus*. It is chiefly distinguished by its prettily coloured varices, which are scarcely raised, but rendered conspicuous by dark-brown spots bordered with yellow. The shell is otherwise green; its surface is apparently smooth, but beneath the lens it is seen to be very finely corrugately striated.

AMPULLARIA LEVIOR, n.sp.

Testa mediocriter umbilicata, conico-ovata, tenuis, pallide fulva, griseo-fusco multifasciata, hic illic malleata, longitudinaliter striatoplicata, transversim obscurissime striata et crenato-lirata; spira conica, elatiuscula; anfractus 5, rotunde convexi; ultimus $\frac{3}{4}$ longitudinis

testæ æquans, inflatus, leviter obliquus; apertura patula, intus fusco fasciata; labrum acutum. Operculum corneum, fuscum, concentricè conspicuè plicatum. Long. 43, lat. 35 mm.; apertura, long. 31, lat. 20 mm.



Hab.—Amazon River.

A shell of light substance and colour, with an unusually expanded aperture. It somewhat resembles *A. dolioides*, Reeve, but has not the sutural depression characteristic of that species.
